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AMENDMENTS TO THE CLAIMS**Please amend the claims as follow:**

1. (Previously Presented) A semiconductor layer, comprising:  
a first layer comprising a  $\text{Ga}_2\text{O}_3$  system single crystal substrate; and  
a second layer obtained by replacing a part rather than all of oxygen atoms of the first layer with nitrogen atoms.
2. (Previously Presented) A semiconductor layer according to claim 1, wherein the second layer comprises a GaN system compound semiconductor.
3. (Cancelled.)
4. (Previously Presented) A semiconductor layer according to claim 1, wherein the first layer comprises  $\text{Ga}_2\text{O}_3$ ,  $(\text{In}_x\text{Ga}_{1-x})_2\text{O}_3$  where  $0 \leq x < 1$ ,  $(\text{Al}_x\text{Ga}_{1-x})_2\text{O}_3$  where  $0 \leq x < 1$ ,  $(\text{In}_x\text{Al}_y\text{Ga}_{1-x-y})_2\text{O}_3$  where  $0 \leq x < 1$ ,  $0 \leq y < 1$ , and  $0 \leq x + y < 1$  as a main constituent.
5. (Previously Presented) A semiconductor layer according to claim 2, wherein the second layer comprises GaN,  $\text{In}_z\text{Ga}_{1-z}\text{N}$  where  $0 \leq z < 1$ ,  $\text{Al}_z\text{Ga}_{1-z}\text{N}$  where  $0 \leq z < 1$ ,  $\text{In}_z\text{Al}_p\text{Ga}_{1-z-p}\text{N}$  where  $0 \leq z < 1$ ,  $0 \leq p < 1$ , and  $0 \leq z + p < 1$  as a main constituent.
6. (Currently Amended) A semiconductor layer, comprising:  
a first layer comprising a  $\text{Ga}_2\text{O}_3$  system semiconductor;  
a second layer comprising a GaN system compound semiconductor and obtained by replacing a part or all of oxygen atoms of the first layer with nitrogen atoms; and  
a third layer comprising  $[[\text{an}]]$  a GaN system epitaxial layer grown on the second layer.
7. (Previously Presented) A semiconductor layer, comprising:  
a first layer comprising a  $\text{Ga}_2\text{O}_3$  system semiconductor; and  
a second layer comprising a GaN system compound semiconductor and formed on

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the first layer,

wherein the first layer comprises at least one of  $(\text{In}_x\text{Ga}_{1-x})_2\text{O}_3$  where  $0 < x < 1$ ,  $(\text{Al}_x\text{Ga}_{1-x})_2\text{O}_3$  where  $0 < x < 1$ ,  $(\text{In}_x\text{Al}_y\text{Ga}_{1-x-y})_2\text{O}_3$  where  $0 < x < 1$ ,  $0 < y < 1$ , and  $0 < x + y < 1$ .

8. (Currently Amended) A semiconductor layer, comprising:
  - a first layer comprising a  $\text{Ga}_2\text{O}_3$  system semiconductor;
  - a second layer comprising a GaN system compound semiconductor and formed on the first layer; and
  - a third layer comprising [[an]] a GaN system epitaxial layer grown on the second layer.
9. (Previously Presented) A semiconductor layer according to claim 1, wherein the first layer consists of a single crystal  $\beta\text{-Ga}_2\text{O}_3$ .
10. (Previously Presented) A semiconductor layer according to claim 9, wherein the single crystal  $\beta\text{-Ga}_2\text{O}_3$  has a prismatic shape having a square in cross section, and its axis direction matches a-axis  $\langle 100 \rangle$  orientation, b-axis  $\langle 010 \rangle$  orientation, or c-axis  $\langle 001 \rangle$  orientation.
11. (Previously Presented) A semiconductor layer according to claim 1, wherein the first layer comprises  $(\text{In}_x\text{Ga}_{1-x})_2\text{O}_3$  where  $0 < x < 1$ .
12. (Previously Presented) A semiconductor layer according to claim 1, wherein the first layer comprises  $(\text{Al}_x\text{Ga}_{1-x})_2\text{O}_3$  where  $0 < x < 1$ .
13. (Previously Presented) A semiconductor layer according to claim 1, wherein the first layer comprises  $(\text{In}_x\text{Al}_y\text{Ga}_{1-x-y})_2\text{O}_3$  where  $0 < x < 1$ ,  $0 < y < 1$ , and  $0 < x + y < 1$ .
14. (Previously Presented) A semiconductor layer according to claim 6, wherein the second layer comprises a same compound semiconductor as the third layer.

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15. (Previously Presented) A semiconductor layer according to claim 6, wherein the first layer consists of single crystal  $\beta$ -Ga<sub>2</sub>O<sub>3</sub>.

16. (Previously Presented) A semiconductor layer according to claim 7, wherein the first layer further comprises a single crystal  $\beta$ -Ga<sub>2</sub>O<sub>3</sub>.

17. (Previously Presented) A semiconductor layer according to claim 16, wherein the single crystal  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> has a prismatic shape having a square in cross section, and its axis direction matches a-axis <100> orientation, b-axis <010> orientation, or c-axis <001> orientation.

18. (Currently Amended) A semiconductor layer according to claim 7, further comprising a third layer comprising [[an]] a GaN system epitaxial layer grown on the second layer.

19. (Previously Presented) A semiconductor layer according to claim 8, wherein the second layer comprises a same compound semiconductor as the third layer.

20. (Previously Presented) A semiconductor layer according to claim 8, wherein the first layer consists of single crystal  $\beta$ -Ga<sub>2</sub>O<sub>3</sub>.

21. (Previously Presented) A semiconductor layer, comprising:  
a first layer comprising a Ga<sub>2</sub>O<sub>3</sub> system single crystal substrate; and  
a second layer obtained by replacing a part rather than all of oxygen atoms of the first layer with nitrogen atoms,  
wherein the second layer comprises a GaN system compound semiconductor.